IN THE CLAIMS:

1. (Original) A microwave SMA connector comprising:
a body acting as ground;
a central conductor existing in the inner part of said body;
an insulator with a predetermined dielectric constant existing between said body and said central conductor;
a first step transition part formed in said body;
a taper formed in said central conductor in order to fix said central conductor and said insulator and to improve RF characteristics; and
a second step transition part formed in said central conductor corresponding to said first step transition part to improve RF characteristics.

2. (Original) A microwave SMA connector as set forth in claim 1, wherein the length l of said taper is determined by the relation of $l \le \frac{\lambda_g}{4}$, where λ_g is wavelength of the highest one of frequencies that can pass the conductor.

3. (Currently Amended) microwave SMA connector as set forth in claim 1 ~~or 2,~~ wherein the characteristic impedance of said step transition part is 50Ω.

4. (Original) A microwave SMA connector as set forth in claim 3, wherein the cutoff frequency of said connector is set to have up to 12 GHz bandwidths so that said connector has low loss.

5. (Original) A microwave SMA connector as set forth in claim 4, wherein the characteristic impedance, the insertion loss and the VSWR of said connector are optimized at said cutoff frequency.

6. (Original) A microwave SMA connector as set forth in claim 2, wherein the distance h between said first step transition part and said second step transition part is determined by the relation of $h \le \frac{\lambda_g}{10}$.

7. (Original) A microwave SMA connector as set forth in claim 1, wherein said insulator is Teflon.

8. (Original) A microwave SMA connector as set forth in claim 1, wherein said body and said central conductor are gilded with gold.

9. (Original) A microwave SMA connector with broad bandwidth characteristics comprising:

a body acting as ground;

a central conductor existing in the inner part of said body;

an insulator with a predetermined dielectric constant existing between said body and said central conductor;

a first step transition part having multi-step structure in said body;

a taper formed in said central conductor to fix said central conductor at said insulator and to improve RF characteristics; and

a second step transition part having multi-step structure formed in said central conductor corresponding to said first step transition part to improve RF characteristics.

10. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 9, wherein the length l of said taper is determined by the relation of $l \le \frac{\lambda_g}{4}$, where λ_g is wavelength of the highest one of frequencies that can pass the conductor.

11. (Currently Amended) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 9 ~~or 10,~~ the characteristic impedance of said step transition part is 50Ω.

12. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 11, wherein the cutoff frequency of said connector is set to have up to 18 GHz bandwidths so that said connector has low loss.

13. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim12, wherein the characteristic impedance, the insertion loss and the VSWR of said connector are optimized at said cutoff frequency.

14. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 10, wherein the distance h between said first step transition part and said second step transition part is determined by the relation of $h \leq \frac{\lambda_g}{10}$.

15. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 9, wherein said insulator is Teflon.

16. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 9, wherein said body and said central conductor are gilded with gold.

17. (Original) A microwave SMA connector with broad bandwidth characteristics comprising:

a body acting as ground;

a central conductor existing in the inner part of said body;

an insulator with a predetermined dielectric constant existing between said body and said central conductor;

a first step transition part having multi-step structure in said body;
a taper formed in said central conductor to fix said central conductor at said insulator and to improve RF characteristics;
a second step transition part having multi-step structure formed in said central conductor corresponding to said first step transition part to improve RF characteristics; and
a slot formed in said central conductor.

18. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 17, wherein the length l of said taper is determined by the relation of $l \leq \frac{\lambda_g}{4}$, where λ_g is wavelength of the highest one of frequencies that can pass the conductor.

19. (Currently Amended) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 17 ~~or 18,~~ the characteristic impedance of said step transition part is 50 Ω.

20. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 19, wherein the cutoff frequency of said connector is set to have up to 18 GHz bandwidths so that said connector has low loss.

21. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 20, wherein the characteristic impedance, the insertion loss and the VSWR of said connector are optimized at said cutoff frequency.

22. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 18, wherein the distance h between said first step transition part and said second step transition part is determined by the relation of $h \leq \frac{\lambda_g}{10}$.

23. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 17, wherein said insulator is Teflon.

24. (Original) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 17, wherein said body and said central conductor are gilded with gold.

25. (Original) A microwave SMA connector with Ku-band comprising:
a body acting as ground;
a central conductor existing in the inner part of said body;
an insulator with a predetermined dielectric constant existing between said body and said central conductor;
a first step transition part having multi-step structure in said body;
an inserted slit in said central conductor in order to fix said central conductor to said insulator and to improve inserted loss and VSWR characteristic;
a second step transition part having multi-step structure formed in said central conductor corresponding to said first step transition part to improve RF characteristics; and
a slot formed in said central conductor.

26. (Original) A microwave SMA connector with Ku-band as set forth in claim 25, wherein the length l of said taper is determined by the relation of $l \le \frac{\lambda_g}{4}$, where λ_g is wavelength of the highest one of frequencies that can pass the conductor.

27. (Currently Amended) A microwave SMA connector with Ku-band as set forth in claim 25 ~~or 26,~~ wherein the characteristic impedance of said step transition part is 50 Ω.

28. (Original) A microwave SMA connector with Ku-band as set forth in claim 25, wherein the cutoff frequency of said connector is set to have up to 18 GHz bandwidths so that said connector has low loss.

29. (Original) A microwave SMA connector with Ku-band as set forth in claim 26, wherein the characteristic impedance, the insertion loss and the VSWR of said connector are optimized on said cutoff frequency.

30. (Original) A microwave SMA connector with Ku-band as set forth in claim 26, wherein the distance h between said first step transition part and said second step transition part is determined by the relation of $h \leq \frac{\lambda_g}{10}$.

31. (Original) A microwave SMA connector with Ku-band as set forth in claim 25, wherein said insulator is Teflon.

32. (Original) A microwave SMA connector with Ku-band as set forth in claim 25, wherein said body and said central conductor are gilded with gold.

33. (Original) A microwave SMA connector with Ku-band as set forth in claim 25, wherein thickness, depth and length of said slit have constant values.

34. (Original) A microwave SMA connector with Ku-band as set forth in claim 25, wherein the step intervals of said first step transition part and said second step transition part are constant.

35. (Original) A microwave SMA connector with Ku-band comprising:
a body acting as ground;
a central conductor existing in the inner part of said body;
a first step transition part having multi-step structure in said body;
a second step transition part having multi-step structure formed in said central

conductor corresponding to said first step transition part to improve RF characteristics;

a first insulator with a predetermined dielectric constant existing between said body and said central conductor; and

a second insulator with a predetermined dielectric constant that exists between said body and said central conductor and corresponds to each of said transition parts and separates said first insulator into left and right sides of said connector in order to fix said first insulator, said central conductor and said body and to improve inserted loss and VSWR characteristics and,

wherein it is characterized in that said central conductor, said first insulator and said second insulator are fixed by impedance matching.

36. (Original) A microwave SMA connector with Ku-band as set forth in claim 35, wherein the length l of said taper is determined by the relation of $l \leq \frac{\lambda_g}{4}$, where λ_g is wavelength of the highest one of frequencies that can pass the conductor.

37. (Currently Amended) A microwave SMA connector with Ku-band as set forth in claim 35 ~~or 36,~~ wherein the characteristic impedance of said step transition part is 50 Ω.

38. (Original) A microwave SMA connector with Ku-band as set forth in claim 35, wherein the cutoff frequency of said connector is set to have up to 18 GHz bandwidths so that said connector has low loss.

39. (Original) A microwave SMA connector with Ku-band as set forth in claim 36, wherein the characteristic impedance, the insertion loss and the VSWR of said connector is optimized at said cutoff frequency.

40. (Original) A microwave SMA connector with Ku-band as set forth in claim 36, wherein the distance h between said first step transition part and said second step transition part is determined by the relation of $h \leq \frac{\lambda_g}{10}$.

41. (Original) A microwave SMA connector with Ku-band as set forth in claim 35, wherein said insulator is Teflon.

42. (Original) A microwave SMA connector with Ku-band as set forth in claim 35, wherein said body and said central conductor are gilded with gold.

43. (Original) A microwave SMA connector with Ku-band as set forth in claim 35, wherein said insulator is air.

44. (Original) A microwave SMA connector with Ku-band as set forth in claim 35, wherein a diameter of said central conductor of a part in which said first insulator is inserted and a diameter of said central conductor part in which said second insulator is inserted are set to be different according to the impedance matching.

45. (New) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 10 the characteristic impedance of said step transition part is 50Ω.

46. (New) A microwave SMA connector with broad bandwidth characteristics as set forth in claim 18 the characteristic impedance of said step transition part is 50 Ω.

47. (New) A microwave SMA connector with Ku-band as set forth in claim 26 wherein the characteristic impedance of said step transition part is 50 Ω.

48. (New) A microwave SMA connector with Ku-band as set forth in claim 36 wherein the characteristic impedance of said step transition part is 50 Ω.